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CULTIVATED PLANTS

Hotu-matua is said to have brought to Easter Island all the plants that the natives formerly cultivated, some of which they still raise on a small scale. There is little doubt that most of these plants were growing on the island when the first discoverers landed there. Some additional varieties may have been introduced later, when active intercourse between Tahiti and Easter Island became common. On the other hand, many varieties and forms of plants have died out and some species, the arrowroot (*pia*) for example, have entirely disappeared. In 1780 La Pérouse (130, vol. 1, p. 78) made the first attempt to introduce new plants on the island. The gardener of his expedition sowed cabbage, carrot, beet, corn, and gourd seeds together with orange, citron, and cotton. Nothing is known as to the fate of these plants or the natives' attitude toward them. The missionaries, especially Roussel, and later the colonist Salmon, greatly increased the resources of the island by introducing useful plants and trees. Figs and mulberry trees, grapes, peaches, *miro-tahiti* (*Melia azedarach*), and acacias are associated in the natives' memory with the name of Father Roussel who first brought them to the island. The English managers residing at Mataveri have done much to acquaint the natives with new kinds of food.

Sweet Potato

The sweet potato (*Ipomoea batatas*) is known as *kumara*. Its importance to Easter Islanders is symbolically expressed in the following sentence in which a woman of the island epitomizes the monotony of life in that isolated land: "Here we begin at birth by eating sweet potatoes, then we go on eating sweet potatoes, and finally we die." Eyraud (81, vol. 38, p. 126), the first European to live a long time with the Easter Islanders, says: "They cook the eternal sweet potatoes. It is the everyday dish, the invariable staple food of the Kanaka, big and small." Behrens (18, vol. 1, p. 130) correctly states that sweet potatoes take the place of bread on Easter Island. Cook (53, vol. 1, p. 288) asserts that the sweet potatoes he ate on the island were the best he ever tasted, and Thomson (215, p. 456) reiterates the statement. According to G. Forster (83, vol. 1, p. 573) they were "gold, yellow and as sweet as carrots and extremely nourishing."

Sweet potatoes thrive in well-drained soil and porosity is one of the chief characteristics of Easter Island ground. Nowadays ground for the cultivation of sweet potatoes is tilled with the plow, but the old method of sticking (*hao*) the stems with buds (*tumu hua*) into small earth mounds (*puku*) is still used. I was told that when the plant is high the mound around it is raised (*puke*) in order to prevent attacks of insects and rot. The term *kau* applies to the stems of the potato which root to form the new plant; *roria* applies to the

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244 high stem when it extends and begins to produce tubers. Old tubers, no longer edible, are called *keipara*. Natives often gather (*tua*) sweet potatoes from old, abandoned fields.

244 192 The appearance of the plant, especially of its leaves, distinguishes for the natives the forms to which they give different names. Knoche (123, p. 134) collected in 1912 more than 25 names for kinds of sweet potato, and he believes that formerly the natives had a more extensive classification. My more recent list of names is little shorter than his. Taste plays an insignificant part in the classifications, whereas external and trifling characteristics are important. Often the distinguishing traits disappear entirely when the leaves are dry. Sweet potato names obtained either from informants or from literature are:

Kumara ure-omo, kumara-uriuri (black), *kumara-uka-tue, ehiva* (white), *aropiro* (yellow), *renga-moe-tahi-teatea, renga-moe-tahi-uriuri, okeoke* (slightly red), *paka-taero* (violet or black), *tipa-tai-paka* (white), *apuka* (white), *pita* (white), *mari-mamu* (like white of egg), *mari-kia-kia* (long form), *tuitui-ko-viro, rau-miro* (black), *epunua* (black), *makuto, kava-tangueti* (white), *kava-aka-iroiro* (white), *ure-vai, apuka-eu* (white), *mine* (white), *tua-tea* (white), *puku*. All these names refer to shape and color of the tubers, not to the leaves. The most prized sweet potato, *tua-tea*, is believed to have disappeared from the island with the passing of the kings.

271 Several travelers have stated that the natives ate raw sweet potatoes to quench their thirst. Thomson (215, p. 456) expressly declares that "they ate them both raw and cooked." With their abundant supply of rain water, collected from the zinc roofs, modern natives never need to wet their mouths with the scanty juice of the *kumara*.

Taro

244 262 Taro (*Colocasia antiquorum* var. *esculenta*) is much less important as food than sweet potatoes. Forster (83, vol. 1, p. 587) says that during his trip across the island he passed "through a number of plantations of bananas, potatoes and yams, and one of the eddoes." Cook (53, vol. 1, p. 288) mentions the "tara or eddy root" after the sweet potatoes and yams. It is possible that the white roots mentioned by Behrens (18, vol. 1, p. 130) were taro. Gonzalez (190, p. 101) most certainly alludes to the taro when he writes of "yucca".

244 Before centralizing in Hanga-roa, the Easter Islanders cultivated taro in enclosures where some tubers still grow. Today the most valued ground for taro cultivation is that covered with stones. Near Hanga-roa I saw taro plants growing in such a depth of small volcanic stones that not the slightest trace

244 192 of earth could be seen. The layer of stones retains some humidity and protects the young plants from the direct rays of the sun. The natives say that the stones cause the taro to "suffer" (*hakamamae*), thereby making it grow better. Like the sweet potato, taro has many forms or types, and their classifi-

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cation is based upon minor characteristics of the plants. I collected the following 24 names of supposed taro varieties:

Taro-vaihi, vaihi-iti, ketu-anga-mea, hore-hore-tapatea, tua-koiro, pia nguhu-haha-tea, ngeti-tea-tea, ngaatu, hara-hara, tea-tea, koro-maruu, mango, taro-ketu-turi, kape Rapanui, taro-ngeti-uriuri. The *hivo taro* (foreign taro) is subdivided into *taro-uriuri* and *taro-teatea.* The commonest form is the *hara-hara.*

Arum, *kape* (*Alocasia macrorrhiza*) is mentioned in the creation chant collected by Thomson (p. 321): "Acridness copulating with Bad Taste produced the Kape." The name of this species, which is akin to taro, was given to me in the list of taro names. It was probably introduced on the island in early time and is still cultivated.

Yam

Yams, *uhi* (*Dioscorea* sp.), have ceased to be cultivated, though some still grow wild on the inner side of the crater of *Rano-kao.* The natives seem to have held them in higher esteem in olden times, for all of the travelers of the eighteenth century allude to them as one of the principal staple foods of the natives. Today the islanders think yams tasteless, and during my whole stay I was offered them only once. Martinez (151, p. 37) lists the following 41 yam names:

Pua-rau-oho-uri, pua-rau-oho-tea, pua-tivvka, pua-aru-aru, pua-rona, pua-vahi, eihe, ihe-matao-raha, ihe-mutu-po, nahe, nahe-mataa-toka, nahe-rehe-rehe, ravi, ravi-uri, ravi-tea, ravi-a-kurakura, tea-ho-popo, tea-makuna, tea-nuhi, veri-aka-tau, moko-haha-tea, veri-pupuru, rua-papa, tuke ipuakere, tuke taro kura, tupere-uri, tupere-tea, moko-iku-keu, papake-tea, apuku eu, kunekune, pa, erere, kukuru toua, mine, papake-uri, papake-kahu-kahu, anaukaho, ravei, ravei mangamanga, ravei pako, ekoka rua ravei.

Yams were planted in carefully made mounds of earth. Overgrown yams which become hard are called *kane.* Tubers eaten by worms are said to be *momo.*

Ti

The ti (*Cordyline fruticosa*) is mentioned for the first time by Palmer (171, p. 170) in 1868. He writes that the plant "is pretty plentiful, but is put to no other use than for wattling of the grass houses and as javeline shafts." The ti has become extremely rare. I saw only a few plants, growing wild near La Pérouse Bay; there are, or were, specimens in Rano-kao. Charred ti leaves supplied the black powder (*ngarahu*) which was used for tattooing.

Sugar Cane

Sugar cane, *toa (Saccharum officinarum),* is first referred to by Roggeveen (186, p. 13), who lists it among the products brought to him in great quantities. The sugar-cane stalks which G. Forster (83, vol. 1, p. 571) noticed near a house "were about nine or ten feet high, even in this parched country, and

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fibers served for tying purposes in the construction of houses. Today they are used in making baskets.

Gourds

White gourds, *hue* (*Lagenaria vulgaris*), were among the plants seen by the Spaniards in the fields of Easter Island (90, p. 123). They did not escape the attention of Cook (53, vol. 1, p. 288), though Forster failed to notice them.

The gourds, which fifty years ago grew wild over the island, were once abundant, but they seem to have disappeared entirely. Some of the graves we opened contained fragments of gourds in rather bad condition.

I assume that there was only one variety of gourd on Easter Island. The names that Knoche (123, p. 118) gives as varieties of calabashes are actually names of something quite different. The word *hipu* means container and applies of course to the gourds which were the only containers used by the natives. *Pakahara* means the shell of anything, but especially of a gourd. *Moutini* are pumpkins which have been introduced, probably from Tahiti where they have the same name.

Gourds were of two kinds. The round ones were used as containers for small things and the elongated ones were for water. Large calabashes in which the natives kept clothes, soaked mulberry bark, or boiled potatoes were called *kaha*.

Paper Mulberry

Paper mulberry trees, *mahute* (*Broussonetia papyrifera*), were raised in the enclosures found near the ancient villages, according to informants. These enclosures, some of which may also have been used for banana trees (fig. 2),

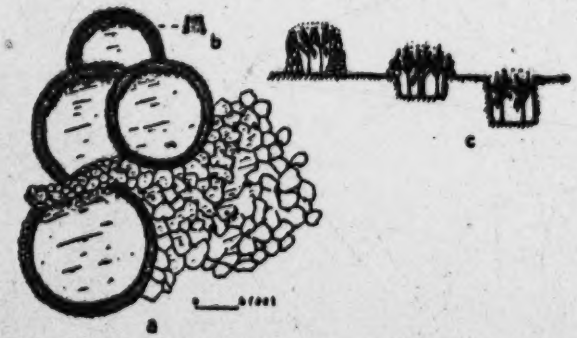

Figure 2.—Cultivation enclosures: *a*, enclosure near Vai-tarai-kai-ua; *b*, cross section of wall construction of enclosure shown in *a*; *c*, three types of enclosure in section, scale 1:250 (from Skottsberg, 208, vol. 1, fig. 2).

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248 are generally not very extensive and their number and size seem to corroborate Cook's statement (53, vol. 1, p. 291) that the natives had difficulty in getting raw material for their clothes. La Pérouse (130, vol. 1, p. 73) was impressed by the scarcity of the *mahute*: "These trees are very rare, having been destroyed by the droughts. Such as have survived are only three feet high, and these they have been obliged to encompass with walls to secure them from the winds: it is remarkable that the height of these trees never exceeded that of the walls by which they are sheltered."

G. Forster (83, vol. 1, p. 568) describes a mulberry tree plantation: "Being arrived at the shrubbery which we had in view, we found it was nothing but a small plantation of paper mulberry, of which here, as well as at Teheitee, they make their cloth. Its stems were from two to four feet high, and planted in rows, among very large rocks, where the rain had washed a little soil together."

The expedition sent by Cook (53, vol. 1, p. 285) to explore the south coast "saw in several places the Otaheitian cloth plant; but it was poor and weak, and not above two and a half feet high at most."

Today the *mahute* is found only in the interior of the crater of Rano-kao, where, at about the time of La Pérouse (130, vol. 1, p. 81), "the marsh was surrounded by finest plantations of bananas and mulberry trees." They still grow well on the northern slope among big stones.

Turmeric

249 Turmeric, *pua* (*Curcuma longa*), grows sparsely in the bottom of the crater of Rano-kao. The Spaniards who went round the island in 1770 saw in the plantations "a root which they chew and daub their body and limbs all over with; it is good for yielding a fine yellow dye" (90, p. 123). The natives esteemed both the dye and the perfume of the plant, for the native name means fragrance.

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Arrowroot

●244 Arrowroot, *pia* (*Tacca pinnatifida*), was described to me by the islanders. According to them, it resembled *pua*, with the sole exception that the *pia* root was white. The rhizomes of *pua* and *pia* are quite unlike. In ancient times it was eaten after it had been baked either upon or in the oven. Arrowroot yielded a dye which was made from the starch by the same method as that used for the *pua*. Knoche (123, p. 120) and Brown (27, p. 39) both identify the plant as the wild arrowroot.

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The word *pia* appears in an old chant collected by Thomson (215, p. 520), in which are described genealogically the origins of plants and other elements of nature. If Thomson's text were entirely reliable, it would prove beyond any doubt that arrowroot was known to Easter Islanders before contact with

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white men. However, no early visitor mentions the arrowroot and it is not cultivated today. It may have been replaced by manioc.

Coconut

In the second part of the nineteenth century, some coconut trees or simply some coconuts (*niu, makoi*) were brought to the island either by Easter Islanders returning from Tahiti or by missionaries. This explains why Palmer (171, p. 170) saw large coconut bowls, although he was unable to find any coconut trees. It is probably to that attempt at coconut cultivation that Tepano alluded when he told me that in his mother's time there were some coconut trees at Poike, near Maunga Teatea. They are purported to have been destroyed during the war between the Miru and the Tupa-hotu. Tepano affirms having seen ancient boxes made from coconuts. The two trees now growing on the island were planted by Salmon.

Foreign Plants

Plants of European or American origin, now cultivated on Easter Island, are peas (*pipi*), beans (*ariko*), melons (*melone*), watermelons (*santia*), onions (*onioni*), manioc (*manioko*), maize (*tarake*), pepper (*oporo*), and pineapple (*anana*). Fig trees (*pika*) and mulberries (*monamona*) are abundant but the natives care little for their fruits.

The island soil is particularly favorable for beans and though the islanders complain that potatoes do not thrive, those of the English resident are the best I have tasted anywhere. The Williamson and Balfour Company is trying to develop the cultivation of maize by the natives, who have prospects of selling it at good prices, but few islanders have taken advantage of the opportunity.

Comparison with Cultivated Plants on other Polynesian Islands

The plants introduced and cultivated on Easter Island in early days are all Polynesian species. Due to the cold climate there are no breadfruit trees on the island and the two coconut trees do not bear fruit. In this respect Easter Island resembles Rapa where, because of the cold, there are no breadfruits, coconuts, and probably no pandanus.

Easter Island has no kava though kava was consumed on Mangareva and in the Marquesas whence the Easter Islanders probably came. Perhaps the Easter Island climate is unfavorable. The name kava is used on Easter Island in the composite form *kavakava atua*, designating a fern. Kava is also absent on Rapa though the climate there is suitable for its growth.

In the Marquesas as on Easter Island sugar cane and paper mulberry were cultivated in enclosures (104, p. 67).

9: Forster T-5 (1774) 1777
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1774. MARCH. with a muſket in his hand, but very juſtly reflected, that ſo ſlight a crime did not deſerve the puniſhment of a leaden bullet.

In our walk along the ſea-ſhore, we diſcovered a few ſtalks of the ſame ſpecies of celery which is plentiful on the beaches of New Zeeland, and we alſo found two other little plants common to that country. Whether theſe plants originally exiſted on the iſland, or ſprung up from ſeeds, which the current of the ſea, or birds by their plumage might tranſport from the oppoſite ſide of the ocean, I cannot venture to determine. We likewiſe met with a plantation of yams *(dioſcorea alata*, Linn.*)* which in ſo poor a *flora* as that of Eaſter Iſland was a great addition. The great correſpondence in the features, cuſtoms, and languages of theſe people, to thoſe of other natives of the South Sea iſlands, gave us ſome room to hope for ſuch domeſtic animals among them, as we had obſerved at Taheitee or New Zeeland. But notwithſtanding the moſt diligent ſearch, we never met with any other than common fowls, which were of a very ſmall breed, and had a dull plumage. It is true we obſerved alſo two or three noddies, which were ſo tame as to ſettle on the ſhoulders of the natives, but from theſe individuals we could not conclude, that they kept a regular breed of them.

About ſun-ſet we left the watering-place, and walked to the cove where our boat lay at a grapnel. In our way we paſſed